

KHVOSTIKOV, I. A.

PHASE I

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 251 - I

BOOK

Call No.: QC976.N5K5 1948

Author: KHVOSTIKOV, I. A.

Full Title: LUMINOSITY OF THE NIGHT SKY. 2nd Edition

Transliterated Title: Svecheniye nochnogo neba, 2-isdaniye dopolnennoye

Publishing Data

Originating Agency: Academy of Sciences, USSR. Popular-Scientific Series.

Publishing House: Academy of Sciences, USSR

Date: 1948

No. pp.: 496

No. of copies: 4,000

Editorial Staff

Editor: Academician S. I. Varilov

Tech. Ed.: None

P. F. Yudin, Cor. Member of  
the Acad. of Sciences, USSR,

Editor-in-Chief: Committee of the Academy  
of Sciences, USSR for  
the Publication of Popular-  
Scientific Literature.

Appraiser: None

Text Data

Coverage: The book covers aurorae boreales (pp. 7-47); luminosity of the night sky (pp. 48-61); the green line (pp. 62-82); spectra of the night sky luminosity and aurorae (pp. 83-140); discussion on nitrogen atoms;

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APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000722510005-9"

Svecheniye nochnogo neba, 2 isdaniye dopolnennoye

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forbidden lines in the radiation spectrum of the atmosphere (pp. 141-162); infrared radiation of the night sky (pp. 163-175); luminosity of the twilight sky (pp. 176-213); nitrogen in the upper atmospheric layers (pp. 214-276); photometric analysis of the night sky luminosity (277-361); polarization of the night sky luminosity (pp. 362-380); theory of the night sky luminosity (pp. 381-470). The text is based mainly on non-Russian researches and investigations.

The book does not seem to include anything new. Of interest is the extensive bibliography of 434 references, of which only 27 are from Russian sources after 1939.

Purpose: An attempt to systematize all obtainable information on the subject of the luminosity of the sky.

Facilities: State Optical Institute of Leningrad; Academy of Sciences, USSR, Committee of the Study of the Stratosphere, Moscow; Geophysical Institute of the Academy of Sciences, USSR, Moscow.

No. of Russian and Slavic References: 27 or total 434.

Available: Library of Congress.

2/2

KHVOSTIKOV, I. A., PROF

PA 66T67

USSR/Geophysics  
Stratosphere  
Ionosphere

Jan 1948

"Composition and Properties of the Stratosphere and  
Ionosphere," Prof I. A. Khvostikov, 14 pp

"Vest Ak Nauk SSSR" No 1

Treats: the stratosphere and stratosphere theory,  
water vapor in the stratosphere, ozone in the strato-  
sphere, temperature of the higher strata of the atmos-  
phere, the ionosphere, composition of air in the ion-  
osphere and problem of vertical intermixing, the ion-  
osphere and the sun, temperature of the ionosphere,  
wind in the stratosphere, and the stratosphere and  
weather.

66T67

Khvostikov, I.A.

Khvostikov, I.A. "The story of a raindrop", (On the processes of the origins of atmospheric precipitation). Illustrated by N. Smol'yaninov. Znanie - sila, 1948, No. 12, p. 25-29 and 38.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 9, 1949)

KHVOSTIKOV, I. A.

3

③ geo

Meteorological Abst.

Vol. 5 No. 1

Jan. 1954

Part 1

Radiation and Temperature

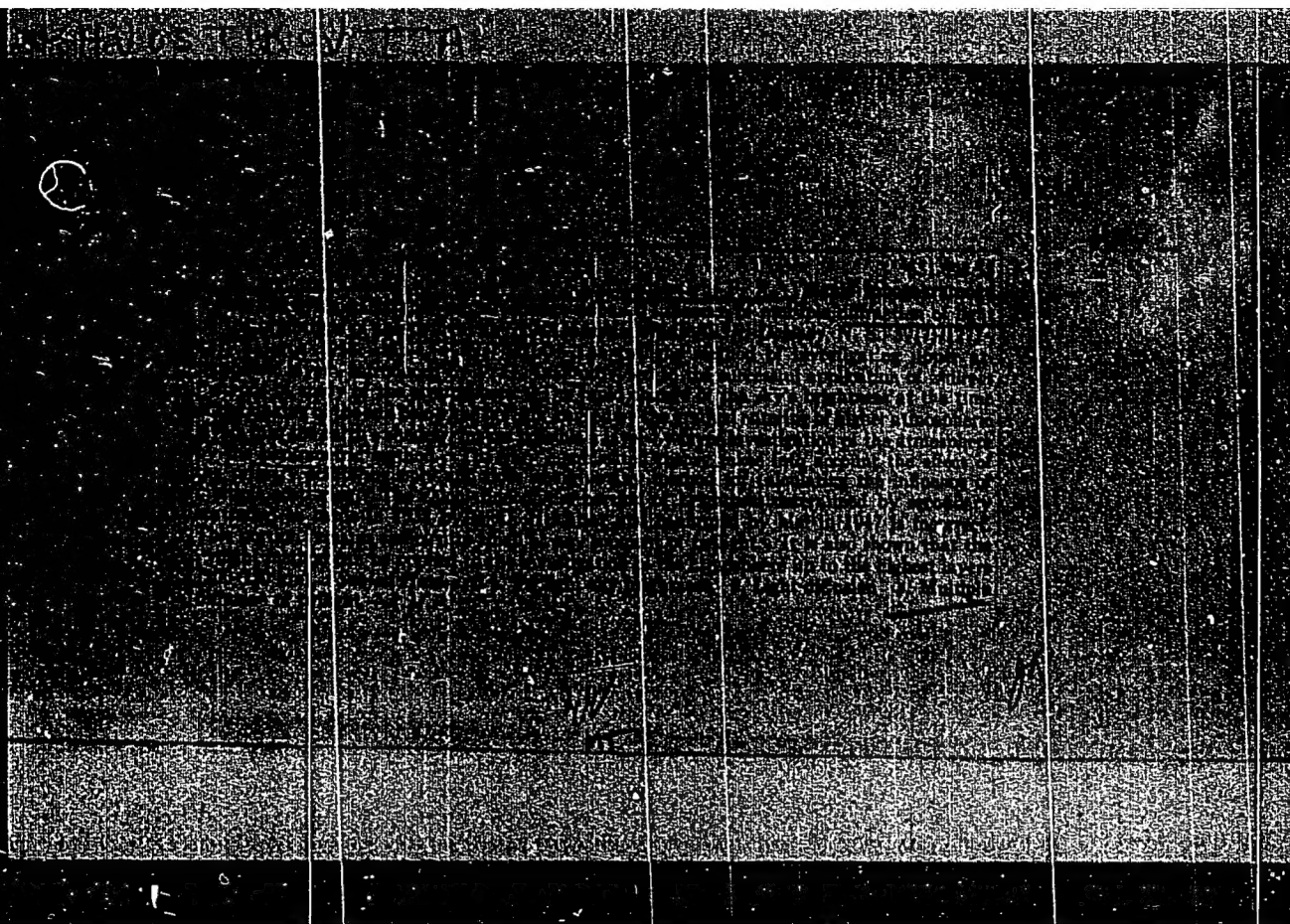
5.1-161

551.521.4

Khvostikov, I. A. Luminestentsia atmosfery. [Luminescence of the atmosphere.] *Voprosy Fizicheskikh Nauk*, Moscow, 36(3):372-386, Nov. 1948. 4 figs., 16 refs., eq. DLC—  
A brief history of scientific study of atmospheric luminescence, beginning, of course, with  
Lomonosov (1750) and his interest in the aurora borealis, and continuing down to the discovery  
of the aurora australis, the light of the night sky (1919) twilight luminescence (1936) and  
artificial excitation of fluorescence in the atmosphere (1947). Separate sections of this care-  
fully prepared review article take up the night and twilight luminescence; the sodium lumi-  
nescence in the tropopause; nature of the light of the night sky (120-250 km height) and  
photoluminescence measurements and theory. In addition to the author's work, that of  
ELATRY and FARNES (1942) is discussed. Subject Headings: 1. Light of the night sky  
2. Photoluminescence 3. Sky light spectroscopy studies.—M.R.

"APPROVED FOR RELEASE: 06/13/2000

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CIA-RDP86-00513R000722510005-9"

1ST AND 2ND EXPERTS										3RD AND 4TH EXPERTS									
PROCESSES AND PROPERTIES INDEX																			
<p>551.510.5 : 551.593.55</p> <p>2234. Structure of the high atmospheric layers from twilight observations. <u>Mikhailovskii, T. G. AND KROKHIN, A. G.</u> <u>Dokl. Akad. Nauk, SSSR, 59 (No. 7) 1283-5 (1948) in Russian.</u>—Regular electrophotometry of twilight has been carried out since 1942 at the <u>Abastumani astrophysical observatory</u>. The accuracy of the method (cf. <u>Mikhailovskii, A. G.</u>, 53, 127 (1946)) was high (<math>\pm 1\%</math>) in all conditions of light. As a result, 250 twilight curves comprising different years and seasons, at dawn and dusk conditions, have been compiled which the authors think might represent complete materials for studying the structure of the high atmospheric layers by the twilight method. The paper is devoted to comparing the resulting values of density and pressure with corresponding values obtained by other workers. The values on which this comparison is based are those of the "general" curve (i.e. the average of 250 individual curves) which is free of background influences of the night sky and expressed in absolute units. The calculations of the pressure at various altitudes were made by Staude's method. For altitudes of 40-170 km the calculated density values were compared</p> <p>with Whipple's observations on meteors, the pressure values with Haring's polar light observations and, finally, with density determinations by radio-wave observations (for D-layer, those of Budden, Ratcliffe and Willets; for E- and F-layers, Appleton's measurements). Thus, for any altitude, there were always values obtained on 3 entirely independent methods for comparison. It is interesting to find that between 40 and 180 km the twilight curve not only agrees with all the other curves, but that an average curve from all the available curves exactly coincides with the twilight curve, and with this curve only. The agreement does not continue beyond 180 km, but there are other theoretical results available now which again would seem to bring out the reliability of the twilight</p> <p>"photo constant" in the range of 1000-800 Å, and below, yielding a value of <math>1-1.5 \text{ erg/cm}^2 \text{ sec}</math>. The author points out the difficulties encountered when comparing the experimental findings with the quantum-mechanical calculations of the cross-section of photo-ionization and of the recombination coefficient of atomic O.</p> <p style="text-align: right;">Atmospheric optics</p>																			
<p>AN 55.4 METEOROLOGICAL LITERATURE CLASSIFICATION</p> <p>1500 1500000</p> <p>15000 1500000</p> <p>150000 1500000</p> <p>1500000 1500000</p>																			

1. KHVOSTIKOV, I. A.
2. USSR (600)
4. Physics and Mathematics
7. Progress of Physical Sciences, a journal. Reviewed by I. A. Khvostikov.  
Sov. Kniga, No. 1, 1950.

9. Report U-3081, 16 Jan. 1953. Unclassified.

KHVOSTIKOV, I.A.

ISAYEV, S.I.; ~~KHVOSTIKOV~~, I.A., prof., red.; FIRSOVA, Ye.A., red.;  
MOSKVICHEVA, N.I., tekhn.red.

[Northern lights] Poliarnye silaniia. Pod red. I.A.Khvestikova.  
Moskva, Izd-vo Glavsevmorputi, 1952. 60 p. (MIRA 11:5)  
(Auroras)



GAVRILOV, V.; KHVOSTIKOV, I.A., professor, nauchnyy redaktor; FALALEYE-  
VA, T.F., redaktor.

[Optical phenomena in the atmosphere] Svetovye iavleniia v atmosfere. Moskva, Gos. izd-vo kul'turno-prosvetitel'noi lit-ry, 1952. 91 p.  
[Microfilm] (MIRA 7:11)  
(Meteorological optics)

KHVCSTIKOV, I. A.

"Silvery Clouds and the Structure of the Stratosphere". Sb. Pamyati Serg. Ivan.  
Vavilova AN SSSR, Moscow (1952), pp. 349-362

KHVCSTIKOV, I. A.

KHVOSTIKOV, I. A.

Meteorological Abstr.  
Vol. 4 No. 2  
Feb. 1953  
Miscellaneous  
Applications

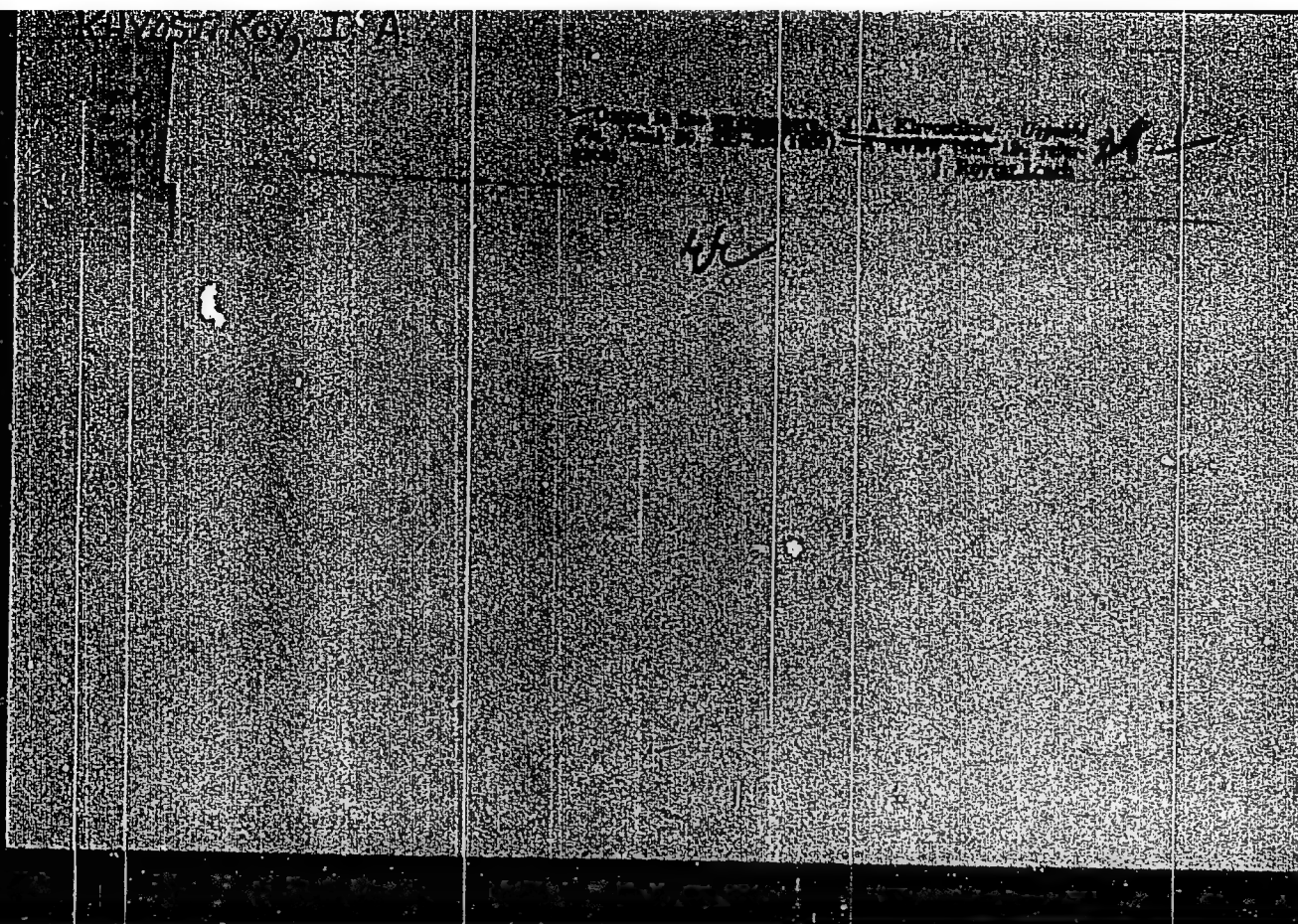
4.2-276  
KHVOSTIKOV, I. A. Serebristye oblaka. [Noctilucent clouds.] *Prirada*, Moscow, 5:49-49, May 1952. 8 figs., 12 plates, 3 refs. DLC—Scientific investigations of noctilucent clouds began in 1835, when V. K. Tseraskii carried out the first systematic observations. The author summarizes the results of observations during almost 60 years in Russia, Germany and Norway and shows that the most remarkable phenomenon is the stability of the height of the clouds, which was determined by numerous measurements to be at about 82 km above sea level. The observations revealed also that the clouds have a great speed up to scores of m/sec with a westerly direction of the motion. Many scientists assumed that the stability of cloud height proves that small particles produce the silvery or noctilucent clouds. The work of ASTAROVICH published in 1939 established the most probable sizes of particles as  $0.2\mu$  (confirmed by measurements of diffraction properties of the clouds). Spectrographs show a great intensity of light in the short wave region of the spectrum. The author analyzed the thermal and moisture conditions in the stratosphere and lower ionosphere and marked the most probable zones of cloud formation on a graph of pressure and humidity distribution up to 100 km. These zones are: troposphere, stratosphere. (a) at a height below 33 km and (b) the layers at heights between 79 and 84 km. At the level of 25-27 km the so-called nocturnal clouds occur occasionally and the 79-84 km level is the boundary layer between stratosphere and ionosphere where the noctilucent clouds were observed. *Subject Headings*: 1. Noctilucent clouds 2. Ionospheric research 3. Stratospheric research 4. U.S.S.R.—N.T.Z.

KHVOSTIKOV, I.A.

Characteristics of noctilucent clouds. Izv.AN SSSR Ser.geofiz.no.7:  
869-871. J1.'56. (Clouds) (MIRA 9:9)

KHVOSTIKOV, I.A., doktor fiziko-matematicheskikh nauk, professor.

Earth and the sun. Znan.sila 31 no.9:8-12 8 '56. (MLRA 9:10)  
(Earth) (Sun)



Khvostikov, I. A.

AUTHORS: Mikhnevich, V. V. and Khvostikov, I. A. 49-11-10/12

TITLE: Study of the Upper Layers of the Atmosphere.  
(Izucheniye vysokikh sloyev atmosfery).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,  
1957, No.11, pp. 1393-1409 (USSR)

ABSTRACT: Review of pre-war and post-war work in this field. A certain amount of information is given on apparatus used in Soviet rockets for exploration of the upper atmosphere, however, some of this information was published earlier. Fig.4, p.1401, gives a diagrammatic drawing of a meteorological rocket which is equipped with small size thermal pressure gauges. More detailed information on rocket investigations of the upper atmosphere for altitudes up to 80 km was published in a earlier paper by Alekseyev, P. P. et alii (Meteorology and Hydrology, 1957, No.6) and also in a paper by B. A. Mirtov, (Uspekhi Fiz. Nauk, 1957, September). The results of rocket investigations are given in a series of tables which contain American as well as Soviet results. Recent trends in investigating the structure and properties of the upper layers of the atmosphere are summarised very briefly in the last paragraph, quoting Soviet as well as American

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Study of the Upper Layers of the Atmosphere. 49-11-10/12  
APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722510005-9"  
information. Attention is drawn to the problem of what influence solar activity has on the weather.  
There are 6 figures, 5 tables and 78 references, 45 of which are Slavic.

ASSOCIATION: Ac. Sc. U.S.S.R. Institute of Applied Geophysics.  
(Akademiya Nauk SSSR Institut Prikladnoy Geofiziki).

AVAILABLE: Library of Congress.

Card 2/2

3.1800

81762

S/035/60/000/02/04/009

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 2, p. 56, # 1475

AUTHORS: Megrelishvili, T. G., Khvostikov, I. A.

TITLE: New Bands in the Spectrum of Twilight Sky ✓

PERIODICAL: Astron. tsirkulyar, 1958, noyabrya 28, No. 197, pp. 6-8

TEXT: In the period from December 1957 to November 1958, 59 spectra of twilight sky glow were taken in the region of  $\lambda\lambda$  5400-6800 by means of a ЦП-48 (SP-48) high aperture-ratio spectrograph. On these spectrograms 22 new bands were detected in addition to the known emissions  $\lambda$  5577 (OI),  $\lambda$  6300-6364 (OI),  $\lambda\lambda$  5890-5896 (Na). The new bands are preliminarily identified as follows:  $\lambda\lambda$  6784, 6707, 6679, 6591, 6544, 6469, 6395, 5480 as the bands of the first positive system of  $N_2$  (4,1), (5,2), (6,3), (7,4), (8,5), (9,6) and (9,4), respectively;  $\lambda\lambda$  6757, 6741, 6577 as the bands of the "new" system of  $N_2$ ;  $\lambda\lambda$  6577, 6544, 6538, 6525 as the P-branches of the band (6,1) of OH;  $\lambda\lambda$  6686, 6403.5, 5609 as the bands of the Asundi system, triplet system and Angstrom system of CO, respectively;

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81762

S/035/60/000/02/04/009

New Bands in the Spectrum of Twilight Sky

$\lambda\lambda$  6445, 5637, 5430 as  $C_2$  bands;  $\lambda$  5942 as, possibly, telluric band of  $H_2O$ ;  
 $\lambda\lambda$  6714, 6491 as Ca lines. Moreover, the band  $\lambda$  6707.1  $\pm$  0.5 was detected which  
possibly corresponds to the Li resonance line which merges with the band (5,2)  
of the  $N_2$  first positive system.

L. M. Fishkova

X

Card 2/2

KHVOSTIKOV, I.A.

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000722510005-9"

Nature of noctilucent clouds. Mek.probl.meteor. no.1:112-114  
'60.

(Cloud physics)

(MIRA 13:8)

KHVOSTIKOV, I. A., and MEGRELISHVILI, T. G.,

"The Emission in the Spectrum of Twilight."

report presented at the 12th General Assembly of the Intl. Union of  
Geodesy and Geophysics, Helsinki, Finland, 25 July - 6 Aug 1960.

MIRTOV, Boris Alekseyevich; KHVOSTIKOV, I.A., doktor fiz.-matem. nauk, otv.  
red.; LEKSINA, I.Ye., red. izd-va; POLYAKOVA, T.V., tekhn.red.

[Gas composition of the earth's atmosphere and methods for its  
analysis ] Gazovyi sostav atmosfery Zemli i metody ego analiza.  
Moskva, Izd-vo Akad. nauk SSSR, 1961. 261 p. (MIRA 14:10)  
(Atmosphere)

IKAUNIYEKS, Ya.Ya.[Ikaunieks, J.], otv. red.; VILIMANN, Ch.I.[Villmans, C.],  
red.; GRISHIN, N.I., red.; DIRIKIS, M.A., red.; KHVOSTIKOV, I.A.,  
red.

[Transactions of the Sixth Conference on Noctilucent Clouds] Trudy  
6go soveshchaniia po serebristym oblakam, Riga, 1961. Riga, Izd-  
vo Akad.nauk Latviiskoi SSR, 1961. 197 p. (MIRA 15:1)

1.Soveshchaniye poserebristym oblakam, 6th, Riga, 1961. 2. Direktor  
Astrofizicheskoy laboratorii AN Latviyskoy SSR (for Ikauniyeks).  
(Clouds—Congresses)

KHVOSTIKOV, I.A.

"Thermal conditions in the upper atmospheric layers" by K.IA.  
Kondrat'ev, O.P. Filipovich. Reviewed by I.A. Khvostikov. Meteor.  
i gidrol. no.5:53-57 My '62. (MIRA 15:6)  
(Atmospheric temperature)  
(Kondrat'ev, K.IA.) (Filipovich, O.P.)

KHVOSTIKOV, I.A.; BEN'KOVA, N.P., doktor fiz.-matem. nauk, otv. red.;  
MIRTOV, B.A., kand.viz.-matem.nauk, otv. red.; VERSTAK, G.V.,  
red.; ISAKOVICH, T.D., red.; PODOL'SKIY, A.D., red.; POLENOVA,  
T.P., tekhn. red.

[Papers ]Sbornik statei. Moskva, Izd-vo Akad. nauk SSSR.  
No.11[Physics of ozonosphere and ionosphere]Fizika ozono-  
sfery i ionosfery. 1963. 662 p. (MIRA 16:2)

1. Akademiya nauk SSSR. Mezhduevdomstvennyy geofizicheskiy ko-  
mitet. V razdel programmy MGG.

(Atmosphere, Upper)

S/050/63/000/001/001/007  
D218/D307

AUTHORS: Khvostikov, I. A., Izakov, M. N., Kokin, G. A., Kuri-  
lova, Yu. V. and Livshits, N. S.

TITLE: Studies of the stratosphere with the aid of meteorological rockets in the USSR

PERIODICAL: Meteorologiya i gidrologiya, no. 1, 1963, 3-8

TEXT: This review paper was first read to the symposium on meteorological rockets and satellites which was held in Washington on April 23-25, 1962. The following topics are reviewed: (1) seasonal, latitudinal and longitudinal temperature variations, (2) sudden increases in the temperatures of the stratosphere over the Arctic, (3) temperature stratification of the stratosphere, (4) thermal conditions in the upper stratosphere during the polar night, and (5) data on winds in the stratosphere. There are 1 figure, 1 table and 14 references (6 Soviet-bloc references).

ASSOCIATION: Tsentralnaya aerologicheskaya observatoriya (Central Aerological Observatory)

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S/169/63/000/003/009/042  
D263/D307

AUTHOR: Khvostikov, I.A.

TITLE: Noctilucent clouds and atmospheric structure

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 32, abstract 3al87 (Tr. Soveshaniya po serebristym oblakam, 1961, T. 3. Tallin, 1962, 7-13 (Eng. summary))

TEXT: The author discusses the possibility of explaining 3 properties of noctilucent clouds: 1) the unusualness, their altitudinal distribution (they appear only in the region of the mesopause), 2) peculiarities of their seasonal distribution (they are observed in the summer), 3) geographical distribution (they appear between 45 and 65°N). These characteristics of noctilucent clouds can be explained from one point of view: the clouds appear where the air temperature is sufficiently low (160-165°K). The meridional section of the temperature field, given in the paper, shows that this low temperature is found at 80-85 km in the summer in latitude ~ 60°N. Rocket measurements show that the minimum temperature in

Card 1/2



Noctilucent clouds ...

S/169/63/000/003/009/042  
D265/D307

the mesopause in winter is 200-250°K, while in the summer it falls to 170°K in latitude 59°N and remains at 200°K at 33°N. On individual days humidity of the air in the stratosphere reaches  $10^{-4}$ , and above 22-24 km the humidity may even noticeably increase with height. There are measurements which show that air humidity in the stratosphere and mesosphere is highly variable. The paper gives a brief discussion of the possible causes of the warming up of the mesosphere in the winter.

[Abstracter's note: Complete translation.]

Card 2/2

KHVOSTIKOV, I.A.

Journal of abstracts. Meteor. i gidrol. no.12:51 D '62.

(Meteorology—Periodicals)

(MIRA 15:12)

KHVOSTIKOV, I. A.; IZAKOV, M. N.; KOKIN, G. A.; KURILOVA, Yu. V.;  
LIVSHITS, N. S.

Using meteorological rockets in the U.S.S.R. to study the strato-  
sphere. Meteor. i gidrol. no.1:3-8 Ja '63.

(MIRA 16:1)

1. Tsentral'naya aerologicheskaya observatoriya.

(Atmosphere, Upper—Rocket observations)

Khvostikov, I. A.

10.

S/169/63/000/003/006/042  
D263/D307

AUTHORS: Alekseyev, P.P., Besyadovskiy, Ye.A., Biryukova, L.A.,  
Golyahev, G.I., Ivanovskiy, A.I., Izakov, M.M.,  
Kokin, G.A., Kurilova, Yu.V., Livshits, N.S., Petrov,  
A.A., Rozhdestvenskiy, B.G., Solov'yev, N.V., Speran-  
skiy, K.Ye., Khvostikov, I.A., Shvidkovskiy, Ye.G.  
and Shcharba, I.A.

TITLE: Study of the upper layers of the atmosphere with the  
aid of meteorological rockets

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 28,  
abstract 34166 (Tr. Vses. nauchn. Meteorol. sovesh-  
chaniya. T.I.L., Gidrometeoizdat, 1962, 91-103)

TEXT: In the present review-type article the authors give  
the results of studies carried out at Tsentralnaya aerologicheskaya  
observatoriya (Central Aerological Observatory) on atmospheric sound-  
ing with meteorological rockets. Measuring methods are described and  
the main points are given for obtaining such atmospheric character-

Card 1/2

S/169/63/000/003/006/042  
D263/D307

Study of the upper layers ...

istics as pressure, temperature, and wind. Certain results are given: data of seasonal temperature variations at heights up to 50 km in the middle latitudes of the USSR and in polar regions, cases of sudden warming up, characterization of temperature distribution curves, a table characterizing the temperature inversion below the stratopause under the conditions of polar night, and data regarding the circulation in the upper atmospheric layers. Information is given on the constructed meridional sections of temperature fields and on the zonal component of the gradient wind. (25 references).

[Abstracter's note: Complete translation]

Card 2/2

KHVOSTIKOV, Ivan Andreyevich; KALIOVA, I.M., ed.;  
YASNOGORODSKAYA, M.M., ed.

[Upper layers of the atmosphere] Vysokie sloi atmosfery.  
Leningrad, Gidrometeoizdat, 1964. 605 p. (KIRA 17:7)

KHVOSTIKOV, I.A.

Investigation of the stratosphere by means of meteorological  
rockets in the U.S.S.R. in the period of the International Geophysical  
Cooperation and the International Geophysical Year. Trudy TSAO  
no.52:3-5 '64. (MIRA 17:7)

ACCESSION NR: AT4035464

8/2789/64/000/052/0053/0059

AUTHOR: Kurilova, Yu. V.; Khvostikov, I. A.

TITLE: Classification of temperature stratification of the atmosphere to heights of 45 km

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy\*, no. 52, 1964. Rezul'taty\* raketny\*kh issledovaniy atmosfery\* v period MGG i MGS (Results of atmospheric investigations by means of rockets during the period of the International Geophysical Year and International Geophysical Cooperation), 53-59

TOPIC TAGS: meteorology, air temperature, atmospheric stratification, stratosphere, troposphere

ABSTRACT: This study was based on rocket measurements of temperature to heights of 45 km made by personnel of the Otdel stratosferny\*kh issledovaniy Tsentral'noy aerologicheskoy observatorii (Stratosphere Research Division of the Central Aerological Observatory) during the IGY and IGC periods. Observations were made at various latitudes: on Kheys Island (35 launchings) and in the temperature latitudes of the European SSSR (32 launchings). The results of 23 launchings aboard the "Ob'" in the southern hemisphere also were used. A total of 90 stratification  
Cord 1/4



ACCESSION NR: AT4035464

curves for various latitudes and seasons were obtained. All the stratification curves of the extratropical latitudes in their main features fall quite clearly into three types of stratification. The stratification curves for the tropical latitudes formed a fourth type. In the extratropical latitudes there were three layers identified: troposphere, lower and upper stratosphere. Cases with a negative temperature gradient in the lower stratosphere (temperature drop) formed type I, cases with isothermal conditions -- type II, and stratification curves with an inversion from the tropopause formed type III, as shown in Fig. 1 of the Enclosure. The method used in computing the stratification curves is described, the principal characteristics of the stratification types discussed and the latitudinal and seasonal characteristics of the stratification types given. Type I was observed only during the polar night. Type II, isothermal in the stratosphere, is observed, like type III, in all extratropical latitudes, but the thickness of the isothermal layer and the height of the isopause differ appreciably at different latitudes. Type III, characterized by the onset of a weak inversion directly from the tropopause, is observed for the most part in the summer months in both the polar and temperate latitudes. It was found that a clear seasonal variation in the types of stratification is observed only in the polar latitudes and types I and IV have a strict localization in the polar and tropical latitudes, while types II and III

Card 2/4

ACCESSION NR: AT4035464

are observed in extratropical latitudes. Rocket measurements on the "Ob'" in the southern hemisphere revealed that identical types are observed at comparable latitudes of the northern and southern hemispheres. Orig. art. has: 5 formulas, 2 figures and 2 tables.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

DATE ACQ: 21May64

ENCL: 01

SUB CODE: ES

NO REF SOV: 001

OTHER: 004

Card 3/4

ACCESSION NR: AT4035464

ENCLOSURE: 01

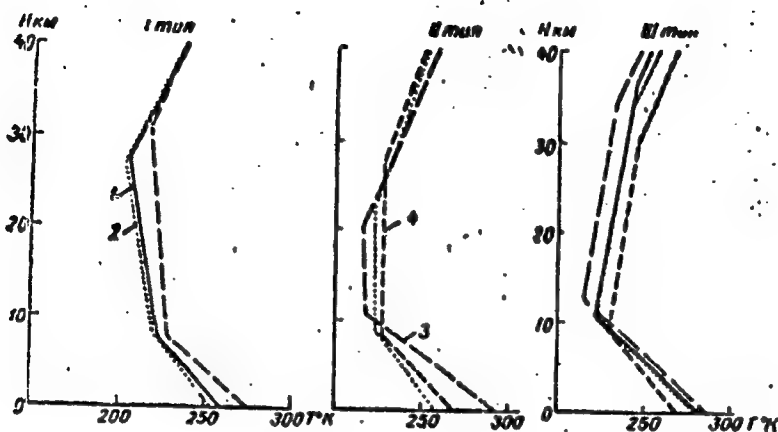


Fig. 1. Standard stratification curves: (1) -- general; (2) -- Kheys Island; (3) -- middle latitudes; (4) -- southern hemisphere ("Ob'" data).

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KURILOVA, Yu.V.; KHVOSTIKOV, I.A.

Typification of the temperature stratification of the atmosphere  
up to an altitude of 45 km. Trudy TSAO no.52:53-59 '64.  
(MIRA 17:7)

KHROMIKOV, I.A., prof., otv. red.

[Geophysics, 1962] Geofizika, 1962. Moskva, 1962. 165 p.  
(MIRA 18:1)

1. Akademiya nauk SSSR. Institut mashinoy informatsii.

L 2916-66 EWT(d)/FSS-2/EWT(1)/EEC(k)-2/EPF(n)-2/FCC/EWP(1) IJP(c) WW/GW/BC/WS-4

AM4048146

BOOK EXPLOITATION

UR/  
551.510.536

Khvostikov, Ivan Andreyevich 44, 55  
21, 44, 55

The upper layers of the atmosphere (Vysokiye sloi atmosfery) Leningrad, Gidrometizdat, 1964. 605 p. illus., biblio. 1500 copies printed. Managing editor: L. R. Rakipova; Editor: M. M. Yasnogorodskaya; Technical editor: O. V. Ivkova; Proofreaders: T. V. Alekseyeva, V. S. Ignatova

TOPIC TAGS: atmospheric composition, atmospheric density, atmospheric pressure, atmospheric sounding, atmospheric tide, atmospheric turbulence, atmospheric upper layer, geomagnetism, meteor measurement, night sky, rocket measurement, satellite measurement, solar earth phenomenon, stratosphere, twilight phenomenon

PURPOSE AND COVERAGE: This book was intended for meteorologists, geophysicists, and astronomers, as well as for engineers and technicians in the fields of radio communication, aviation, and jet technology. Present knowledge concerning the upper layers of the atmosphere is outlined. The methodology of measurements with the aid of rockets and artificial earth satellites is analyzed, as well as methods of meteor, acoustic, and radio measurements, projector sounding of the atmosphere, and optical observations of the night, twilight, and day skies.

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AM4048146

9

Results are presented of the study of the structure and composition of the stratosphere and higher layers, and also of investigations of winds, tide phenomena, vertical and turbulent motion, and circulation of the upper layers of the atmosphere by observations of the ozone, of nascent oxygen, and of water vapor. The theoretical treatment of certain phenomena and atmospheric processes (thermal conditions, air flows, diffusion separation of the gases in the atmosphere, etc.) is presented. Attention is directed especially to the sun-earth problem, including questions pertaining to the effect of solar activity on atmospheric processes, the structure of the upper layers of the atmosphere, and the relationship between circulation processes and geomagnetic variations. The author expresses his gratitude to L. R. Rakipova, Doctor of Physical-Mathematical Sciences, to Professor A. Kh. Khrgian, and to O. V. Yablonskaya.

77  
55

44 55

54 55

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Part I. Structure and composition of the upper layers of the atmosphere

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Card 3/4



KRAUS, Ye.V., kand. fiz-mat. nauk, otv. red.; LENEYKIN, F.S.,  
prof., otv. red.; KHVOSTIKOV, I.A., prof., otv. red.

[Achievements of science; geophysics 1963] Itogi nauki;  
geofizika 1963. Moskva, AN SSSR, 1965. 374 p.  
(MIRA 18:10)

KHVOSTIKOV, I.A., prof.

Scientists discuss problems of general atmospheric circulation.  
Zem.i vsei. 1 no.2:55-59 Mr.-Ap '65.

(MIRA 18:8)

RYAZANOVA, L.A.; KIVOSTIKOV, I.A.

Processes in the stratosphere according to rocket sounding  
data. Meteor. issl. no.9:5-63 '65. (MIRA 19:1)

PAGE NR: AP7007058

SOURCE CODE: UR/0026/66/000/009/0048/0053

AUTHOR: Khvostikov, I. A. (Professor)

ORIG: Abastumani Astrophysical Observatory, AN GruzSSR (Abastumanskaya  
astrofizicheskaya observatoriya AN GruzSSR)

TITLE: Noctilucent clouds

SOURCE: Priroda, no. 9, 1966, 48-53

TOPIC TAGS: atmospheric cloud, atmospheric condensation

SUB CODE: 04

ABSTRACT: This feature article discusses the nature of the mesopause and the two most prominent hypotheses on the origin of noctilucent clouds. The usual background data is given, such as on the change of temperature with height, change of the elasticity of water vapor with height, and latitudinal and monthly number of cases of observation of this phenomenon. The well-reported American-Swedish rocket launchings into noctilucent clouds for determination of the correctness of the water vapor or dust hypothesis are discussed. The author insists on a careful interpretation of the results and warns against too hasty conclusions based on the detection of meteor particles in the clouds. It is necessary, he cautions, to take into account the peculiarities of measurements made on rockets moving at a supersonic velocity. The air flow (accompanied by particles) around the rocket must be thoroughly analyzed; the same is true of yawing of the rocket and existence of a hot boundary layer. However, he feels that the discovery of ice in the clouds by these probes now gives the water hypothesis a solid basis. All water particles must have condensation nuclei and it is natural to expect that meteor particles play this role at the altitude of noctilucent clouds.

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ACC NR: AP7007058

The presence of meteor particles in fact confirms the condensation hypothesis. The author then considers the mechanisms possibly responsible for the condensation which occurs, such as an exceptional cooling of the mesopause or a sporadic increase of moisture content at that height. Particular stress is placed on the author's own theory, which he calls the mechanism of the "solar rain," proposed as early as 1952; additional quantities of water molecules are formed directly in the upper atmosphere (rather than being transported from the troposphere) under the influence of solar corpuscular streams, containing a considerable quantity of hydrogen atoms. After detailing this hypothesis he mentions some dynamic factors which also must not be overlooked. Orig. art. has: 5 figures.

[JPBS: 39,718]

Card 2/2

VILLMANN, Ch.I., red.; GRISHIN, N.I., red.; DIRIKIS, M.A., red.; ROSS,  
Yu.K., red.; KHVOSTIKOV, I.A., red.; SKVORTSOVA, A., red.;  
TOOMSALU, E., tekhn. red.

[Transactions of the Conference on Noctilucent Clouds]Trudy  
Soveshchaniia po serebristym oblakam. 3d, Tallinn, 1961. Tallinn,  
Akad. nauk Estonskoi SSR, 1960. 139 p. (MIRA 15:12)

1. Soveshchaniye po serebristym oblakam. 3d, Tallinn, 1961.  
(Clouds)

Khvostikov, N.Ye.

BAZHANOV, M.S.; Khvostikov, N.Ye.

Shortening the work week at the May First Automatic Bakery, Khleb. i  
kond. prom. 1 no.3:30-31 Mr '57. (MLRA 10:4)

1. Khlebozavod-avtomat imeni 1 maya Moskovskogo gorodskogo tresta  
Bonglavkhleba.  
(Hours of labor) (Moscow--Bakers and bakeries)

L 26637-65 EPF(c)/EPR/EWT(m)/EWP(b)/T/EWP(t) Pr-4/Pa-4 IJP(c)

J1/JG

8/0126/64/018/006/0858/0861

ACCESSION NR: AP5002343

AUTHOR: Salibekov, S. Ye.; Levinskiy, Yu. V.; Khvostikov, V. D.; Levinskaya, M. Kh.

TITLE: Study of the formation of  $\alpha$ -solid solution of nitrogen in zirconium at high temperature

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 6, 1964, 858-861

TOPIC TAGS: zirconium, zirconium nitriding, zirconium hardness

ABSTRACT: Specimens of zirconium sheet 70 x 8 x 0.75 mm were vacuum annealed ( $1 \cdot 10^{-5}$  mm Hg) at 1400C for 30 min and nitrided at 1400-1700C for 15 min to 2 hr in nitrogen under a pressure 2-3 mm Hg higher than atmospheric. On all specimens, two layers with straight boundaries were formed. The outer layer consisted of zirconium-nitride phase ( $\alpha = 4.570$  kK) with a microhardness of 1100-1300 kg/mm<sup>2</sup>. The inner layer consisted of  $\alpha$ -phase, a solid solution of nitrogen in zirconium; its microhardness diminished in the inward direction from 1000 to 600 kg/mm<sup>2</sup>. The base metal was composed of  $\beta$ - and  $\alpha$ -solid solutions with a microhardness of 280 to 350 kg/mm<sup>2</sup>. The rate of growth of the nitrided layers depended on time and temperature. Orig. art. has 5 figures. [A2]

Card 1/2



1 26637-65

ACCESSION NR: AP5002343

ASSOCIATION: none

SUBMITTED: 20Jan64

NO RLV 8(0) 001

ENCL: 00

OTHER: 003

SUB CODE: MM, SS

ATD PRESS: 3167

Cord 2/2

TKACHENKO, N.A.; KHVOSTIKOV, V.V.

Bridges of reinforced concrete slabs. Avt.dor. 26 no.9:26-27  
S '63. (MIRA 16:10)

MARTINAYTIS, V.P., inzh.; KHVOSTIKOV, V.V., inzh.; YATSKEVICIUS, G.Ya., inzh.

Perfect work organization has reduced the time of bridge construction.  
Avt. dor. 28 no.4:11-13 Ap '65. (MIRA 18:5)

33605

S/678/61/000/038/005/009

A057/A126

11.0120

AUTHORS: Sidorov, R.I., Nedel', M.M., Khvostikova, A.A., Ivanova, L.S.  
Kositsyna, E.I.

TITLE: Investigation of the composition of industrial liquid-phase  
hydrogenation products. Report 6. Investigation of the com-  
position of the gasoline fraction in the hydrogenation product  
of petroleum residues

PERIODICAL: Akademiya nauk SSSR. Vostochno-Sibirskiy filial. Trudy. Seriya  
khimicheskaya, no. 38, Moscow, 1961. Prevrashcheniya aromati-  
cheskikh uglevodorodov v protsesse destruktivnoy gidrogenizat-  
sii., 77 - 86

TEXT: The composition of the gasoline fraction obtained from a liquid-  
phase hydrogenation product from mazout of Ramashkin and Andizhan petroleum  
was investigated in order to improve the efficiency of hydrogenation plants.  
The amount of the gasoline fraction, separated by fractional distillation in  
a laboratory-scale column, was 26.1% of neutral oil, 0.67% (2.7% of the methane-  
naphthenic fraction) of which were hydrocarbons boiling at 20 - 50°C. The

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S/678/61/000/038/005/009

A057/A126

Investigation of the composition of.....

latter contain 1.01% 2-methylbutane, 0.93% n-pentane, and 0.75% non-saturated hydrocarbons, or a small quantity of cyclopentane. Determinations by the GROZNIi method [Abstracter's note: not described here] showed the following composition of the investigated gasoline: 8% non-saturated, 25% aromatic, 17.5% naphthenic, and 49.2% paraffinic hydrocarbons. The high content of aromatic hydrocarbons indicates the usefulness of this gasoline as automobile fuel. The single components in the methane-naphthenic fractions were separated also chromatographically on WCM (ShSM) 60 - 150 mesh silica gel, with 12 activity units. The final identification of each component was carried out by means of Raman spectra. 117 compounds, i.e. about 77% of the methane-naphthenic concentrate were identified and some regularities observed. It was observed that naphthenes contain only 12% compounds with quaternary carbon atoms, while paraffinic contain 29.0%. Naphthenes with quaternary atoms are apparently less stable in liquid-phase hydrogenations. Aromatic hydrocarbons were separated in the present study chromatographically and then by fractional distillation into 34 fractions. 14 compounds were identified by means of Raman spectra [on a HCT-51 (ISP-51) device] and ultraviolet spectra [on a C-4 (SF-4) device]. The composition of the aromatic fraction indicates

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A057/A126

Investigation of the composition of.....

the uselessness of the investigated gasoline fraction for the chemical industry. The high content of aromatic compounds and the composition of the methane-naphthenic fraction demonstrates on the other hand that the investigated gasoline fraction could be a suitable automobile fuel. There are 1 figure and 5 tables.

Card 3/3

33606

S/678/61/000/038/006/009

A057/A126

5.3300

AUTHORS: Sidorov, R.I., Nedel', M.M., Khvostikova, A.A., Ivanova, L.S.

TITLE: Investigation of the composition of industrial liquid-phase hydrogenation products. Report 7. Investigation of the composition of the hydrogenation product obtained from petroleum residues

PERIODICAL: Akademiya nauk SSSR. Vostochno-Sibirskiy filial. Trudy. Seriya khimicheskaya, no. 38, Moscow, 1961. Prevrashcheniya aromatischeskikh uglevodorodov v protsesse destruktivnoy gidrogenizatsii., 87 - 94

TEXT: Detailed investigations of liquid-phase hydrogenation products obtained under industrial conditions from petroleum residues are important for studying the chemism of these processes and for the exploitation of the products. Results obtained with hydrogenation products of a petroleum residue are presented and discussed in the present paper. By comparison of the present results with those obtained earlier with coal hydrogenation products, some conclusions can be drawn on the effect of the raw material composition ✓

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33606

S/678/61/000/038/006/009

A057/A126

Investigation of .....

on the yields. A wide fraction of the following composition was used: 91.9% neutral oil, 1.1% bases, 0.3% compounds extractable with 10% NaOH solution, 1.8% tarry compounds separated by treatment with acid and alkali, 1.5% sulphur, and 3.4% water losses. Only the composition of the neutral oil was investigated in the present experiments. The oil was separated by a laboratory-scale fractional distillation column, and the fractions were treated chromatographically on  $\text{CM}(\text{ShSM})$  silica gel. The obtained results demonstrate the considerable effect of the raw material on the yield. The aromatic fractions were investigated in details. The number of carbon atoms in side chains of the molecule of the aromatic hydrocarbons was calculated in an analogous way as suggested by N.R. Hazelwood [Ref. 6: *Analyt. Chem.*, 26, 1073 (1954)]. Calculations made by the Van Nes - Van Westen method gave contradictory results. Crystalline carbazole was found in the wide fraction of the petroleum residue hydrogenation product. A separation of the gasoline fraction is recommended. Another test, related to the effect of the composition of the raw material on the hydrogenation product, was made by chromatographic analysis (using  $\text{ShSM}$  silica gel) of a mazout obtained from Romashkin petroleum. The following conclusions can be drawn: An almost complete hydrogenation of

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S/678/61/000/038/006/009

A057/A126

Investigation of.....

nonsaturated hydrocarbons, conversion of nonhydrocarbons into hydrocarbons, cracking of hydrocarbons with long side chains, hydrogenation of aromatic polycyclic hydrocarbons to hydroaromatic ones with subsequent splitting of naphthenic rings, are resulting in the final product: hydrocarbons with one aromatic ring. These processes occur simultaneously and the relation in the quantity of final products corresponds to the composition of the raw material. There are 5 tables.

X

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33607

S/678/61/000/038/007/009

A057/A126

5.3300

AUTHORS: Sidorov, R.I., Khvostikova, A.A., Nakhmanovich, A.S.,  
Shergina, N.I.

TITLE: Investigation of the composition of industrial liquid-phase  
hydrogenation products. Report 8. Composition of highly con-  
densed aromatic hydrocarbons

PERIODICAL: Akademiya nauk SSSR. Vostochno-Sibirskiy filial. Trudy. Seriya  
khimicheskaya, no. 38, Moscow, 1961. Prevrashcheniya aromati-  
cheskikh uglevodorodov v protsesse destruktivnoy gidrogenizat-  
sii., 95 - 102

TEXT: The composition of high-molecular aromatic hydrocarbons, pres-  
ent in a liquid-phase hydrogenation product obtained from medium-temperature  
semicoke tar, is investigated and the content of hydrocarbon "types" determined  
in the present paper, which is part of a series of reports. The investigation  
concerns a liquid-phase hydrogenation product obtained under industrial conditions  
from a heavy oil of medium-temperature tar of Cheremkovo coal. The product con-  
tained 4.6% water, 10.9% phenols, 2.4% bases and loss, and 82.1% neutral oil.

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Investigation .....

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S/678/61/000/038/007/009  
A057/A126

The latter was separated by fractional distillation, initially at atmospheric pressure up to 320°C (69.7%) and then the fraction in vacuum at 360 - 420°C (20.0%). This fraction was then chromatographically separated into four concentrates and thoroughly investigated. A total amount of 0.55% pyrenes, 2.48% phenanthrenes, and 0.56% anthracenes was found. The latter two were determined by means of the Van Nes - Van Westen n-d-M method. Ultraviolet spectra of the liquid fraction indicate that compounds with condensed aromatic rings are prevailing. According to the n-d-M method they are chiefly of the 2A1N type, containing apparently homologues of tetrahydroanthracene, tetrahydrophenanthrene, and acenaphthene, i.e., compounds with two condensed aromatic rings. Also smaller amounts of the phenyltetralin, and fluorene type may be present. The study proved that the graphical method for the determination of composition has to be completed by data of ultraviolet spectra for high boiling hydrocarbon mixtures. The composition of the concentrate shows that compounds with two, or three naphthenic rings are absent, and the types 2A1N, 3A, 3A1N, and 4A are prevailing. There are 3 figures and 5 tables. ✓

Card 2/2

S/081/62/000/019/026/053  
B101/B180

AUTHORS: Sidorov, A. I., Medel', A. M., Khvostikova, A. A.,  
Ivanova, L. A.

TITLE: Study of the composition of commercial liquid-phase hydro-  
genation products. Communication 7. Composition of the  
hydrogenated product of petroleum residues

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1962, 439-440,  
abstract 15210 (Tr. Vost.-Sib. fil. Sib. otd. AN SSSR,  
no. 33, 1961, 67 - 24)

TEXT: The composition of a side fraction product of the liquid-phase  
hydrogenation of petroleum residues was compared with that of the original  
substance. It was found that the original composition does not affect  
the chemism of conversions but has a considerable effect on the final  
composition of liquid-phase hydrogenation products. The chemism of  
processes occurring under conditions of liquid-phase hydrogenation is  
similar for products of different initial compositions, and there is  
practically complete hydrogenation of the unsaturated hydrocarbons,

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U/081/62/000/012/026/053

Study of the composition of commercial ... B101/B180

conversion of non-hydrocarbon into hydrocarbon compounds, cracking of the hydrocarbons with long side chains, hydrogenation of the aromatic polycyclic hydrocarbons to hydroaromatic compounds with subsequent splitting of the naphthene rings. These processes are simultaneous, and the difference in the quantitative ratio of the end products corresponds to the difference in the composition of the raw material. For Communication 6, see KSHKlin, 1962, 15K181. [Abstracter's note: Complete translation.] ✓

U/081 2/2

SIDOROV, R.I.; KHVOSTIKOVA, A.A.

Treatment of the INZ-600 solid carrier for gas-liquid chromatography.  
Zhur. anal. khim, 20 no.7:898-899 '65. (MIRA 18:9)

1. Irkutsk State University.

*Khvostikova, V.D.*

137-58-5-9457

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 92 (USSR)

AUTHORS: Petrov, D.A., Kekua, M.G., Khvostikova, V.D., Shashkov, Yu.M., Suchkova, A.D.

TITLE: Producing Single Crystals of Silicon (O poluchenii mono-kristallov kremniya)

PERIODICAL: V sb.: Vopr. metallurgii i fiz. poluprovodnikov. Moscow, AN SSSR, 1957, pp 41-46

ABSTRACT: The production of single crystals of Si by drawing from a melt and vertical floating-zone refining is described. Drawing was performed in an apparatus consisting of 3 parts: a vacuum circulation chamber connected with an evacuation system and equipped with electrical leads and mechanism for raising and rotating the crucible; a working chamber consisting of a metal water-cooled cylinder with viewing window; and heads with a mechanism for raising and rotating the seed crystal. The fusion of the Si in a quartz crucible mounted on a graphite base was done by a slit heater made of spectrally pure graphite, with graphite screens around it. Smelting was in vacuum ( $10^{-4}$ - $10^{-5}$  mm Hg). Si produced by the Beketov method was employed in

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137-58-5-9457

### Producing Single Crystals of Silicon

the drawing. After the Si was fused, a thermal regime that assured crystallization of the melt from its center was chosen. The seed was immersed in the melt, and drawing began after it was fused. Single crystals were obtained after the material had been drawn 1, 2, or 3 times. It is noted that the presence of a film on the melt and poor contact between the seed crystal and the melt may cause the crystal drawn to be a polycrystalline. Vertical floating-zone refining was performed in an apparatus consisting of a vacuum chamber in which a Si bar, produced by drawing, was mounted vertically. A Ta heater, creating a zone of fusion within the specimen, moved along the specimen at a rate of  $\sim 2$  mm/min. It was found that a given degree of superheating of the zone was a condition for the production of a single crystal by this method. In a polycrystalline specimen a monocrystalline portion was produced only after several passes, while this was accomplished on the first pass when a monocrystalline seed crystal was employed. Single crystals of Si with resistivities of 15-60 ohm/cm were produced on these apparatus.

1. Single crystals--Growth    2. Single crystals--Resistivity    3. Single crystals--Application

Card 2/2



KHVOSTIKOVA, V.D.

A.П.Прокоп	Важные физические моменты на
O.П.Михайлов	свойства стали в процессе кристал-
Л.М.Белкин	лизации.
Ю.С.Гарбуза	
М.В.Давыдов	Важные условия роста на статистиче-
В.П.Александров	ском уровне прочности.
Э.М.Тютюн	
С.В.Сидель	Закономерности в зависимости
В.А.Киселев	структуры стали от скорости деформации.
В.А.Михайлов	
Е.А.Казанцев	Температурные условия затвердева-
С.В.Сидель	ния структуры стали.
Ю.П.Сидель	Влияние неоднородности деформации
В.А.Лавренко	на свойства стали.
В.В.Гусев	
Л.М.Прохоров	Измерения радиуса зерна в кон-
В.П.Давыдов	такте с горячей деформацией
В.М.Лобанов	300-350 мкм.
В.В.Гусев	
Н.Н.Гусев	Изменения структуры затвердева-
А.А.Мороз	ния структуры стали в процессе
А.А.Иванов	300-350 мкм.
В.В.Гусев	

report submitted for the 5th Physical Chemical  
Conference on Steel Production, Moscow-- 30 Jun 1959.



33807

S/137/62/000/001/069/237  
A060/A101

24.7100

AUTHORS: Voronov, B. K., Dashevskiy, M. Ya., Titova, E. M., Khvostikova, V. D.

TITLE: Obtaining homogeneous single crystals of semiconductors, grown by the Chokhral'skiy method

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 45, abstract 1G346 (V sb. "Vopr. metallurgii i fiz. poluprovodnikov". Moscow, AN SSSR, 1961, 51 - 54)

TEXT: A method is proposed for obtaining single crystals of semiconductors according to Chokhral'skiy's method by pulling out. The semiconductors have a uniform impurity distribution and, accordingly, have uniform electrical characteristics. The method is based on the maintenance of a constant concentration of impurities in the melt and on growing the crystals under conditions such that the effective coefficient of impurity distribution remains constant throughout the process of growth. The uniformity of the impurity concentration in the melt is attained by the use of a crucible fabricated in the form of two communicating vessels. The dimension of the connecting pipe is selected in such a way that it allows one to neglect the diffusion of the impurities from the inner vessel into

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Obtaining homogeneous single crystals of...

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A060/A101

the outer. The flow of material from the outer vessel into the inner occurs only as the crystal is pulled out, and ensures a supply for maintaining a constant concentration of impurities in the melt in the inner crucible. A calculation is given for the ratio of the geometrical dimensions of the outer and the inner crucibles and the calculation of alloying by this method. A hypothesis is put forth as to the possibility of the application of the proposed method for programmed feeding of the melt to obtain single crystals with segments containing various predetermined quantities of impurities. There are 12 references.

B. Turovskiy

[Abstracter's note: Complete translation]

Card 2/2

DASHEVSKIY, M.Ya.; TITOVA, E.M.; KHVOSTIKOVA, V.D.

Chokhal'skii's method of growing single crystals with a uniform  
distribution of impurities. Trudy Inst. met. no.8:143-148 '61.  
(MIRA 14:10)

(Crystals--Growth)

L 6417-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/GG

ACC NR: AP5027411

SOURCE CODE: UR/0181/65/007/011/3326/3530

AUTHOR: Milevskiy, L. S.; Khvostikova, V. D.

ORG: Institute of Metallurgy, Moscow (Institut metallurgii im. A. A. Baykova)

TITLE: Dislocation structure of crystals with a diamond lattice grown in the [001] direction.

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3326-3330

TOPIC TAGS: crystal dislocation, silicon, single crystal growth, crystal structure analysis

ABSTRACT: The authors study isolated edge dislocations parallel to axis [001] and dislocation reaction between them. The Czochralski method was used for growing silicon single crystals from seeds oriented in the [001] direction with random dislocations. The optical polarization method was used for studying microstresses, and copper decoration of the dislocations was used for studying the dislocation structure. Photomicrographs of the dislocations are shown. It is found that a large edge dislocation of a new type with slip plane (100) and Burgers vector [010]

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L 6417-66

ACC NR: AP5027411

perpendicular to the dislocation axis may originate from the additive reaction between dislocations parallel to axis [001]. The particles precipitated during copper decoration of various types of dislocations in silicon grow in the  $\langle 110 \rangle$  directions which intersect the dislocation line but do not lie in its slip plane. A study of these particles with respect to the dislocation axis as well as a comparison of the precipitation patterns on dislocations of various types may be useful in analyzing the dislocation structure of crystals with dislocations having anomalous axes in the body of the crystal as well as that of crystals with dislocation loops. Orig. art. has: 2 figures.

SUB CODE: SS/ SUBM DATE: 20Mar65/ ORIG REF: 005/ OTH REF: 003

CC  
Card 2/2

KHVOSTOV, F.K., inzh.

Theory and calculation of motor torques and of the vibratory (radial) forces caused by high and low harmonics of magnetomotive force of the stator's winding during the warming up of multispeed asynchronous short-circuited motors. Sbor.nauch. trud. IBI no.8:295-318 '58. (MIRA 13:4)  
(Electric motors, Induction)



KEVOSTOV, F. K., Candidate Tech Sci (diss) -- "The theory and computation of rotary moments and vibrating (radial) forces caused by the higher and lower harmonics of the magnetomotive force of the stator winding when racing multi-speed asynchronous shunt-wound electric motors with symmetrical and nonsymmetrical stator windings". Moscow, 1959. 8 pp (Min Higher Educ USSR, Ivanovo Power Engineering Inst im V. I. Lenin), 170 copies (KL, No 22, 1959, 117)

KHVOSTOV, F.K.; ARTEMOV, A.V.

Mechanization and automation of auxiliary operations in open  
mines of the Russian Federation. Biul. tekhn.-ekon. inform.  
Gos. nauch.-issl. inst. nauch. i tekhn. inform. 17 no.12:12-15 D '64.  
(MIRA 18:3)

The image shows a microfiche card with a grid of circular frames. The central frame contains the following text:

16

15

237. Analysis of Certain Unknown Compounds by Means  
of the Hydrogen Peroxide Addition Compound of  
Phthalic Acid. (In Russian.) G. V. Khvostov. *Journal  
of Analytical Chemistry* (U.S.S.R.), v 2, Sept. Oct.  
1947, p. 281-284.

Results indicate that 5 and 10% ethylacetate solu-  
tions of the above complex may be used in the  
determination of the unsaturation of mixtures of  
the oleic acid type. Oxygen numbers obtained  
agree with iodine numbers determined by Gubel's  
method.

Below the main text, there are two rows of classification codes:

AS U. S. L. A. METALLURGICAL LITERATURE CLASSIFICATION

1947-48 1949-50 1951-52 1953-54 1955-56 1957-58 1959-60 1961-62 1963-64 1965-66 1967-68 1969-70 1971-72 1973-74 1975-76 1977-78 1979-80 1981-82 1983-84 1985-86 1987-88 1989-90 1991-92 1993-94 1995-96 1997-98 1999-00

KHVOSTOV, I.S.

Manufacture of furniture panels with sawdust core. Der.prom.4 no.9:  
19-21 S '55. (MIRA 8:11)

1. Direktor Moskovskoy mebel'noy fabriki no.1.  
(Furniture industry)

KHVOSTOV, I.S., inzhener.

Mechanized finishing of better furniture with nitrocellulose  
polishes. Der. prom. 6 no.2:19-21 F '57. (MLRA 10:4)

1. Direktor Moskovskoy mebel'noy fabriki no. 1. Glavmebel'proma.  
(Furniture industry) (Wood finishing)  
(Nitrocellulose)

KHVOSTOV, I.S.

Workers of the Moscow Furniture Fitting Combine No.1 struggle  
for fulfilling the seven-year plan ahead of time. Der. prom.  
12 no.12:1-5 D '63. (MIRA 17:3)

**REPORT**

**Determination of degree of unsaturation of drying oils.**  
 I. V. Khvostov and A. M. Lubman. U.S.S.R. 67,121.  
 Sept. 30, 1950. To det. the degree of satn. of drying oil  
 or unsatd. acid, treat a weighed sample with a soln. of  
 phthalic acid peroxide in Et acetate and det. the decrease  
 in active O. M. Hosh

**ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Chemical Abst.  
Vol. 28 No. 3  
Feb. 10, 1954  
Organic Chemistry

Decanoic peroxide. Peroxide of capric acid (decanoyl peroxide). K. I. Ivanov, I. V. Khvretov, and K. P. Gerasimov. *Zh. Obshch. Khim.* 24:44-45 (1952).  
10.33 ml. 2% aq.  $H_2O_2$  and 44 ml. 5% NaOH was added, at room temp. with stirring; 10.3 g.  $Ca(OH)_2$  and the mixt. filtered after 1 day, yielding 61.3%  $(C_{10}H_{19}CO_2)_2$ , mp 41° (from EtOH); sol. in org. solvents but not in  $H_2O$ ; it gives no color with KI soln. and slowly color with cyanide soln. on heating, but does not react with  $Pb(OAc)_2$ , indicating absence of hydroperoxide. G. M. Kosolapoff



2

Also coupling reaction of  $\beta$ -hydroxy acid  
 I. V. Kuznetsov, *Doklady Akad. Nauk S.S.S.R.* 191: 579-80  
 (1953) - 1953.  $\beta$ -HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>Me (I) in 50 ml. 80%  
 AcOH was added the diazonium salt from 1.02 g.  $\beta$ -  
 ONC<sub>6</sub>H<sub>4</sub>Me (II), after adding of AcONa (Coarse red test) the  
 was cooled, heated to boil, yielding 80%  $\beta$ -HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>Me  
 NO<sub>2</sub> (mp. 110° from AcOH). Similar coupling with di-  
 azonium salt of  $\beta$ -hydroxy acid yields a light yellow coupling prod-  
 uct. Nitration of I with 2 eq.  $\text{HNO}_3$  in AcOH gave  
 the benzene ring nitrated after dil. with H<sub>2</sub>O.  
 O. M. Kuznetsov

KHVOSTOV, I.V.

Oxidation of mesytil oxide by phthalic per-acid. Dokl.AN SSSR 93  
no.5:843-844 D '53. (MLRA 6:12)

1. Predstavleno akademikom V.M.Rodionovym.  
(Oxidation) (Mesytil oxide)

KHVOSTOV, N.N.

Sanitary rules for working with radioactive substances. Gig.  
i san. 23 no.10:59-61 0 '58 (MIRA 11:11)

1. Iz otdela radiatsionnoy gigiyeny Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana Ministerstva zdavookhraneniya RSFSR.

(RADIATION PROTECTION

sanitary rules for protection (Rus))

KHVOSTOV, N.N.

So-called 3-zone construction plan in work with radioactive substances.  
Gig. i san. 25 no. 6:80-84 Je '60. (MIRA 14:2)

1. Iz Moskovskoy gorodskoy sanitarnno-epidemiologicheskoy stantsii.  
(RADIATION PROTECTION) (HOSPITALS—CONSTRUCTION)

KHVOSTOV, N.N.

Some details concerning the equipment of glove boxes. Med. rad.  
6 no.1:68-71 '61. (MIRA 14:3)  
(RADIATION PROTECTION)

SIVINTSEV, Yu.V.; KHVOSTOV, N.N.

Methods for measuring the contamination of the air by radioactive aerosols. Pred.dop.kontsent.atmosf.zagr. no.6:165-186 '62.

(MIRA 15:9)

1. Iz Instituta atomnoy energii AN SSSR i Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnoy gigiyeny Ministerstva putey soobshcheniya.

(RADIOACTIVE FALLOUT)

I 28871-66 ENT(m)

AEC NR, AP6018878

SOURCE CODE: UR/0240/65/000/004/0098/0102

AUTHOR: Khvostov, N. N.

ORG: Department of Radiation Hygiene, Central Institute for the Training of Physicians, Moscow (Kafedra radiatsionnoy gigiyeny Tsentral'nogo instituta usovershenstvovaniya vrachey)

TITLE: Permissible levels of surface contamination with radioactive substances

SOURCE: Gigiyena i sanitariya, no. 4, 1965, 98-102

TOPIC TAGS: radioactive contamination, radioisotope, radioprotective clothing

ABSTRACT: The author made a study of Soviet and foreign literature on maximum permissible levels of surface contamination with radioactive substances, and conducted experiments in actual and experimental conditions to study the transfer coefficient and deactivation efficiency for various cases. On the basis of this work he presents a new classification scheme for maximum permissible levels of surface contamination with radioactive substances. Radioactive isotopes are put in three classes according to the degree of toxicity, instead of in the usual two classes. Areas are divided into "active" and "inactive." The skin of the hands is distinguished from the skin of other parts of the body, and safety clothing is another item. Moreover, "active" and "inactive" areas and safety clothing are given two sets of

Card 1/2

UDC: 614.898+613.648

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ACC NR: AP6018878

permissible levels: a lower set for any considerable area and a higher set for a limited area (not more than 1%, for example, in the case of an "active" area). The article does not treat determination of the actual dosage according to this scheme. Orig. art. has: 2 figures and 1 table. [JPRS]

SUB CODE: 18, 06 / SUBM DATE: 05Sep63 / ORIG REF: 006 / OTH REF: 001

Cont 2/2 CV



34154

S/187/62/000/001/001/001  
D053/D112

6,5000

AUTHORS: Arutyunov, M.G., and Khvostov, N.Ya.

TITLE: Pulse demagnetization of a magnetic carrier

PERIODICAL: Tekhnika kino i televideniya, no. 3, 1962, 16-21

TEXT: A method of demagnetizing magnetic carriers, such as magnetic tapes, drums, etc., by current pulses with a high Q-value flowing in the winding of the erasing head, is described. The Q-value is the reciprocal of the pulse duty factor and is defined by the formula:

$$Q = \frac{T}{\tau}$$

where T is the pulse repetition period and  $\tau$  is the pulse duration. An analysis of the new method and a comparison between the sinusoidal and pulse modes of demagnetization revealed that a theoretical saving in electric power consumption by a factor of 25, can be obtained when using pulse demagnetization with a Q-value equal to 100. The following conclusions are made

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3/15/4  
5/18/62/000/000/000/000  
DO53/D112

Pulse demagnetization ...

on the basis of an experimental investigation carried out in the Laboratory magnitnoy zapisi Nauchno-issledovatel'skogo otdela MEISa (Magnetic Recording Laboratory at the Scientific Research Department of the MEIS) (1) The quality of the pulse demagnetization is not inferior to that of the sinusoidal demagnetization. (2) The saving in active power consumption when using pulse demagnetization is considerable, although less than that theoretically obtained. In one experiment, the obtained power saving factor was 10, at a pulse recurrence frequency of 10,000 cps and Q-factor of 100. This value of the power saving factor can be made to approach the theoretical one by using erasing heads less susceptible to the current frequency in the operating frequency band, than the heads in the experiment. (3) The unbalance effect of pulses of positive and negative polarity, although unwanted, is permissible within certain limits. There are 2 figures and 1 reference: 3 Soviet-bloc and 1 non-Soviet-bloc. The English language reference is: IRE Convention Record 1955, part 4, 95-100.

Card 2/2

ACCESSION NO: AR4033581

S/0169/64/000/002/A008/A008

SOURCE: *Rel. zh. Geofiz.*, Abs. 2A38

AUTHOR: Khrostov, O. P.

TITLE: Theory of suppression of magnetic interference in an airborne magnetometer

CITED SOURCE: *Sb. Geofiz. priborostr. Vy\*p. 14. L.*, Gostoptekhnizdat, 1962, 141-169

TOPIC TAGS: geophysics, geophysical instrument, magnetometer, instrument noise, instrument noise component

TRANSLATION: The article discusses various methods of separating out and compensating magnetic interference created by the magnetic field of an aircraft during an aeromagnetic survey: 1. In the method of compensation of flight interference the computation of the interference components is accomplished using the difference in the magnetometer readings in a horizontal flight on 8 principal flight lines. The method makes it possible to decrease the flight difference to a value close to the threshold of response of the magnetometer ( $\sim 4\%$ ), but does not exclude completely the interference caused by tilting and deviation from the prescribed course. 2. Separation out of interference, with allowance for two types of tilting, is

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ACCESSION NR: AR4033581

accomplished by measurement on specific magnetometer flights of the increment of interference at the time of longitudinal and lateral tilts with the simultaneous recording of tilt angles. Results of these measurements were used to compute the interference components. By means of successive approximations the interference can be compensated in this case approximately to the threshold of response.

3. Separation out of interference, taking into account two types of tilting and deviations from the prescribed course, can be accomplished if the components X and Y of the earth's field are recorded instead of the tilt angles. The method does not require auxiliary instruments for recording the lateral and longitudinal tilting of the aircraft and ensures a higher accuracy. 4. In the compensation method for separating out interference the compensation is accomplished by the selection of compensating fields without any additional apparatus. The possibility of selection exists because in the restricted limits of evolutions of the aircraft the interference is expressed through the X- and Y-increments. In this case the full solution of the problem is accomplished by combining the method of selection of compensating fields with the method of computing the interference components (the computation formulas are cited). The method ensures a high accuracy of separation out of the interference and is free of errors caused by the complex character of maneuvering of the aircraft. The fact that no auxiliary apparatus is needed and the simplicity of analysis of the results make this method accessible for wide

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ACCESSION NR: AR4008230

S/0169/63/000/011/D024/D024

SOURCE: RZh. Geofizika, Abs. 11D145

AUTHOR: Khvostov, G. P.

TITLE: Magnetic range finder

CITED SOURCE: Sb. Geofiz. priborostr. Vy\*p. 15. L., Gostoptekhizdat, 1963, 3-7

TOPIC TAGS: geophysics, geophysical instrument, magnetic range finder, magnetic field measurement, range finder

TRANSLATION: The author discusses the possibility of determining the direction of magnetic field sources according to measured values of the gradients of the magnetic field vector modulus. It is proven theoretically that in the absence of an external magnetic field, the direction of maximum variation of the vector modulus gradient is close to the direction of the magnetic dipole with an error of up to  $14^{\circ}$ . In the presence of an external field, to compute the modulus gradient and the source orientation, it is necessary to measure three orthogonal components of the anomaly field and their derivatives. A possible device for performing these

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ACCESSION NR: AR4008230

operations is described and diagrammed. G. Aleksandrovskaya.

DATE ACQ: 09Dec63

SUB CODE: AS

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7

s/0169/63/000/011/D025/D025

ACCESSION NR: AR4008232

SOURCE: RZh. Geofizika, Abs. 11D152

AUTHOR: Khvostov, O. P.

TITLE: Approximation methods for the compensation of magnetic noise-compensators in magnetometers

CITED SOURCE: Sb. Geofiz. priborostr. Vy\*p. 15. L., Gostoptekhizdat, 1963, 135-142

TOPIC TAGS: geophysical instrument, magnetometer, interference compensation, approximate interference compensation, inductive interference compensation, aircraft noise compensation, noise abatement

TRANSLATION: The author describes a method of compensating constant and partially inductive magnetic aircraft interference by a simple technique under conditions of a normal terrestrial field with a negligible gradient. He cited computational formulas for various components of the constant and inductive noises whose analysis forms the basis of the simplified compensation method. Flights over a selected

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ACCESSION NR: AR4008232

point over opposite routes of  $90^{\circ}$ - $270^{\circ}$ , and then  $0^{\circ}$ - $180^{\circ}$  are carried out to determine the flight-path and banking errors which are then eliminated by successive approximations with the aid of a constant noise compensator along the components  $y_p$ ,  $z_p$ , and  $x_p$ , respectively. Then the compensation is checked by flights over other main directions. The inductive magnetic disturbances are partly compensated thereby. With the presence of an auxiliary magnetometer to compensate the inductive disturbances, the method remains the same, but the order of flights over the main directions and of compensation of the constant and inductive errors is changed. In the event of relocation to an area with a different level of the earth's magnetic field, it is necessary to adjust the noise compensation. The method described makes possible the reduction of the path and banking disturbances from a level of 30-40 % to the threshold of magnetometer sensitivity of 4 %.

G. Aleksandrovskaya.

DATE ACQ: 09Dec63

SUB CODE: AS

ENCL: 00

Card 2/2



62768-65 SW1(1) CW

ACCESSION NR: AR6018934

UR/0169/65/000/007/D031/D031  
85/838

22  
13

SOURCE: Ref. zh. Geofizika, Abs. 70816

AUTHOR: Khvostov, O. P.

TITLE: Compensation of an aircraft's magnetic losses on the ground

CITED SOURCE: Sb. Geofiz. priborost., vyp. 20, L., Nedra, 1964, 31-36

TOPIC TAGS: aeromagnetic surveying, aircraft magnetic loss, ground compensation method, calculation program 12, 27, 25

TRANSLATION: In-flight compensation of an aircraft's magnetic losses during high-precision aeromagnetic surveying involves extensive expenditure of flying time. An approximate method of compensating for magnetic losses on the ground is presented. In the case of magnetic losses on the ground calculation formulas must consider the inclination of the aircraft's long axis and the effect of the aircraft's magnetic field on absolute readings of the magneto-meter. Measurement of magnetic losses should include consideration given to effects of the gradient and variation in the aircraft's magnetic field.

Cont. 1/2

63768-65

ACCESSION NR: AR8018984

Formulas are given for calculating components of constant and inductive magnetic losses. In-flight control measurements should be carried out after magnetic loss compensation on the ground. The cited approximate method is also useful in compensating for magnetic losses of a helicopter, automobile, ship, or other carrier of a T-magnetometer. A. Lozinskaya.

SUB CODE: ES, AC

ENCL: 00

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Card 2/2

AFANAS'YEV, Yu.V.; GOL'DREYER, I.G.; KHVOSTOV, O.P.; SHAUB, Yu.B.

Compensated automatic measurements on alternating current.  
Geofiz. prib. no.9:37-45 '61. (MIRA 15:11)  
(Electric prospecting--~~E~~quipment and supplies)

KHVOSTOV, V.

Active and creative work. Mest.prom. 1 khud.promys. 2 no.9:6-7  
S '61. (MIRA 14:11)

1. Glavnyy inzhener fabriki No.9 Upravleniya shveyroy promyshlennosti  
Mosgorispolkoma.  
(Moscow—Clothing industry)